CSIRO PUBLISHING

Australian Journal of Botany, 2015, **63**, iii–iv
http://dx.doi.org/10.1071/BTv63n4_IN

Introduction

Global research on ultramafic (serpentine) ecosystems (8th International Conference on Serpentine Ecology in Sabah, Malaysia)

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Abstract. Since 1991, researchers from approximately 45 nations have participated in eight International Conferences on Serpentine Ecology (ICSE). The ICSE conferences are coordinated by the International Serpentine Ecology Society (ISES), a formal research society whose members study geological, pedological, biological and applied aspects of ultramafic ecosystems worldwide. These conferences have provided an international forum to discuss and synthesise multidisciplinary research, and have provided opportunities for scientists in distinct fields and from different regions of the world to conduct collaborative and interdisciplinary research. The 8th ICSE was hosted by Sabah Parks in Malaysia, on the island of Borneo, and attracted the largest delegation to date, 174 participants from 31 countries. This was the first time an ICSE was held in Asia, the region that hosts some of the world's most biodiverse ultramafic ecosystems. The presentations provided a cross-section of the current status of research in all aspects of serpentine-biota relations. In this Special Issue of *Australian Journal of Botany*, which encompasses two double issues (1–2 and 3–4), we have compiled a selection of papers from among the oral and poster presentations to provide insights into recent advances in geoecological and applied studies of serpentine habitats worldwide.

Introduction

Ultramafic outcrops (also called 'serpentine') are widespread but sparse, covering roughly 3% of the Earth's surface (Guillot and Hattori 2013). The largest outcrops occur in Cuba, New Caledonia, Indonesia, the Philippines and Malaysia, whereas smaller outcrops are found worldwide, mostly along continental margins and orogenic belts (Brooks 1987; Alexander *et al.* 2007). Soils derived from ultramafic bedrock pose several edaphic challenges for plant growth, including metal toxicity, nutrient imbalances and deficiencies and, in some cases, water stress, with this last feature resulting from the often shallow, rocky, and exposed nature of the outcrops (Proctor 2003; O'Dell and Rajakaruna 2011). Ultramafic ecosystems are renowned for their high levels of plant diversity and endemism, as well as their unique plant–habitat relations (Brooks 1987; Boyd *et al.* 2004, 2009; Harrison and Rajakaruna 2011). The edaphic challenges associated with these island-like habitats have led to the evolution of unique ecosystems, providing model settings for exploration of biological questions at cellular and organismal levels and for the study of ecosystem-level processes (Harrison and Rajakaruna 2011).

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